

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 04-074598

(43)Date of publication of application : 09.03.1992

(51)Int.Cl. C02F 3/30  
C02F 3/34

(21)Application number : 02-186510

(71)Applicant : MEIDENSHA CORP

(22)Date of filing : 13.07.1990

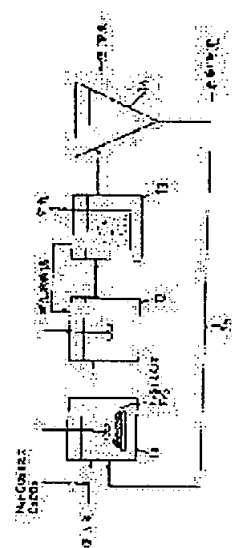
(72)Inventor : MATSUNAGA AKIRA

## (54) METHOD AND APPARATUS FOR SIMULTANEOUS REMOVAL OF NITROGEN AND PHOSPHORUS

### (57)Abstract:

**PURPOSE:** To efficiently perform the simultaneous removal of nitrogen and phosphorus with stable removal capacity, in the treatment using an anaerobic-aerobic activated sludge method, by dipping sulfide ore in an anaerobic tank and introducing a carbon source into the anaerobic tank along with inflow water.

**CONSTITUTION:** After a carbon source such as  $\text{NaHCO}_3$  or  $\text{CaCO}_3$  is introduced into an anaerobic tank 11 along with inflow water, the introduced water is reacted with the sulfide ore such as  $\text{FeS}_2$  or  $\text{FeS}$  received in the anaerobic tank 11 and water containing the sulfur and iron components eluted from the sulfide ore is introduced into a denitrification tank 12 to bring about sulfur denitrification reaction. Thereafter, the water flowing out of the denitrification tank 12 is allowed to flow in an aerobic tank 13 to be nitrified by nitrifying bacterial and a part thereof is returned to the denitrification tank 12 while the outflow water from the aerobic tank 13 is introduced into a sedimentation tank 14 and supernatant water is discharged as treated water. As mentioned above, by filling the anaerobic tank with the sulfide ore, denitrification speed can be increased and the sulfur component eluted from the sulfide ore is oxidized and the rising of a DO value is prevented to keep an anaerobic atmosphere being a necessary condition generating the discharge of phosphorus.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]